

Firebox® V200 Hardware Guide

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This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
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DECLARATION OF CONFORMITY

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505 Fifth Ave. S., Suite 500
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Product (s):

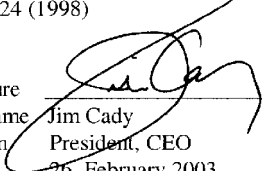
Internet Firewall and VPN (Encryption) Network Device, Models V3064R2, V2CE4H2, V1BE4H2, V0AF2H2, and V3HF2H2.

EU Directive(s):

Low Voltage (73/23/EEC)
Electromagnetic Compatibility (89/336/EEC)

Standard(s):

EN 60950 : 1992 (A1:1993; A2:1993; A3:1995; A4:1997; A11:1997)
EN50022 (1998), Class A
EN50024 (1998)

Signature 
Full Name Jim Cady
Position President, CEO
Date 26 February 2003

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Hardware Description

This chapter provides a visual tour of the external hardware features of the WatchGuard® Firebox® V200 security appliance, focusing on the buttons, LEDs, interfaces, ports, and outlets.

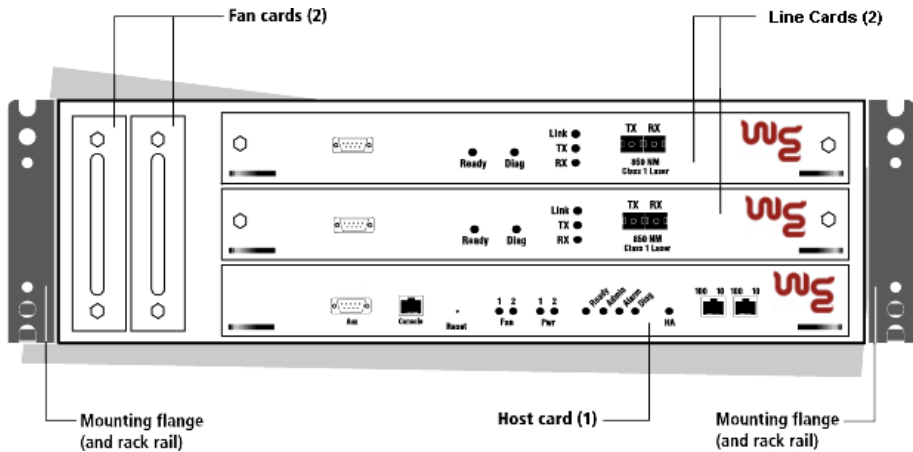
Package Contents

The Firebox V200 appliance is packaged with:

- Two power cords.
- One 6-foot red, crossover 10/100 BaseT Ethernet cable.
- One green, straight-through, 10/100 BaseT Ethernet cable.
- Two Gigabit fiber-optic cables.
- One 6-foot console, RJ 45-to-RJ 45, serial cable and DB-9 adapter.
- A CD containing the WatchGuard Vcontroller application software for use with three different operating systems: Windows 9x/2000/XP, Solaris, and Linux. The CD also provides electronic versions of the complete user documentation set.
- Rack-mounting hardware. If you are mounting the appliance in a rack, note that V200 appliances are 4U high.

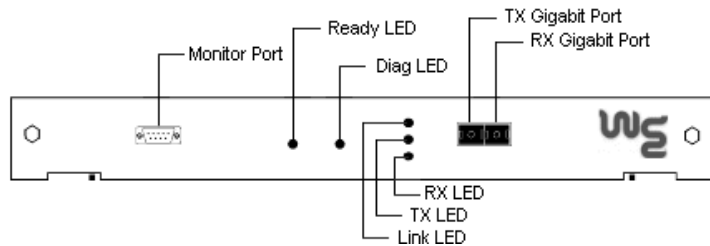
Firebox V200 Front Panel

This illustration of a Firebox V200 security appliance's front panel shows the two fan cards, two line cards, and one host card.



Line cards

The front of each line card includes the following:



Monitor port

A single DB-9 connector provides direct console connection to the appliance.

Ready LED

Blinks while the appliance powers up or down and is steadily lit when the appliance is ready for network traffic.

Diag LED

Reserved for future use.

Link LED

When lit, indicates that the cable is plugged in correctly.

TX LED

Blinks if the appliance is sending a data packet.

RX LED

Blinks if the appliance is receiving a data packet.

TX Gigabit port

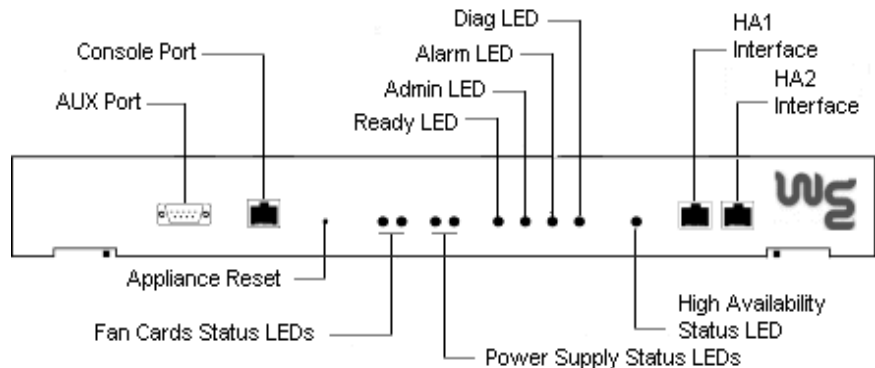
Port for outgoing data.

RX Gigabit port

Port for incoming data.

Host card

The front of the host card includes the following:

***AUX port***

Reserved for future use.

Console port

A single RJ-45 connector provides direct workstation-to-appliance connection.

Appliance Reset

Place a pin in this port to reset the appliance.

Fan Cards Status LEDs

If the lights appear green, the fans are working properly; if red, the fans are not working properly.

Power Supply Status LEDs

If the lights appear green, the power supply is functioning correctly; if red, the power supply is not functioning correctly.

Ready LED

Blinks while the appliance powers up or down and is steadily lit when the appliance is ready for network traffic.

Admin LED

If the light appears red, an administrator is logged in to the appliance through the console port or the Private interface.

Alarm LED

If the light appears green, an alarm is triggered.

Diag LED

Blinks while appliance runs diagnostics.

High Availability Status LED

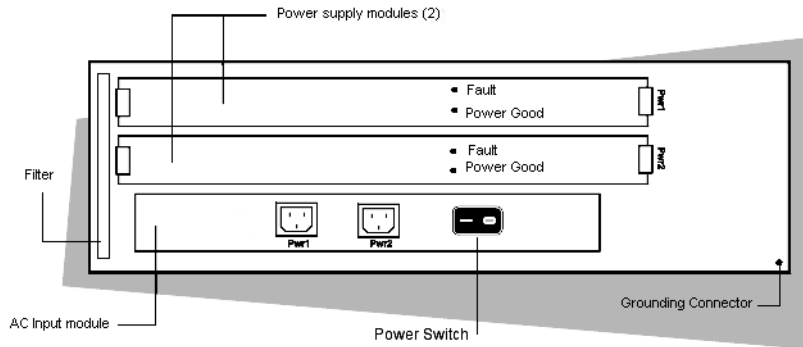
Reserved for future use.

HA1/HA2 Interfaces

High Availability ports.

Firebox V200 Back Panel

The back panel of a Firebox V200 security appliance includes the following:



Filter

Reserved for future use.

AC input module

Enables you to use the supplied power cords to connect the appliances two power supplies to a 100 to 240VAC (50/60Hz) power source. The power supply switch shuts off power to the appliance. Do not shut off power to the appliance unless you first complete a system shutdown in the CLI or Vcontroller. For more information on completing a system shutdown, see the *Firebox Vclass User Guide*.

NOTE

Do not connect any Firebox V200 appliance to a source of power that supplies the wrong voltage. Doing so will damage the appliance and void the warranty.

Power supply modules

Source of power for appliance. Each power supply has a Fault LED and Power Good LED which indicates the status of the power supply.

<i>Appliance Status</i>	<i>Fault LED</i>	<i>Power Good LED</i>
Normal	Off	Green
Possible connection problem. Make sure Power Supply is properly inserted.	Amber	Green
Power Supply failure. Replace Power Supply.	Amber	Off
No power. Check Power Supply connection or Power Switch.	Off	Off

Grounding connector

Used to attach an ESD wrist strap so you can safely channel static electricity.

WARNING

Under normal circumstances, you do not need to open the Firebox V200 appliance, and WatchGuard recommends that you do not. However, if you must open the box to replace a card or for some other reason, see Chapter 2, “Replacing the WatchGuard Firebox V200 Hardware” on page 9 for information on how to put in and take out the line cards, fan cards, and power supplies.

If a power failure occurs

In the event of a power failure, this security appliance—if left connected to the power source— automatically restarts itself when electrical power is restored. You do not have to press the power supply switch on the back of the appliance.

If both power supplies are plugged in and power is lost to one power supply, the unit will continue to operate on the secondary power supply.

Replacing the WatchGuard Firebox V200 Hardware

Under normal circumstances, you do not need to open the Firebox V200 appliance, and WatchGuard recommends that you do not. However, one of the appliance's major components might occasionally need to be replaced. This appendix describes how to remove and replace the following:

- Line cards
- Fan cards
- Power supply module

You can not replace the host card. Removing and replacing components should only be performed by a networking hardware maintenance technician experienced in servicing electrical equipment.

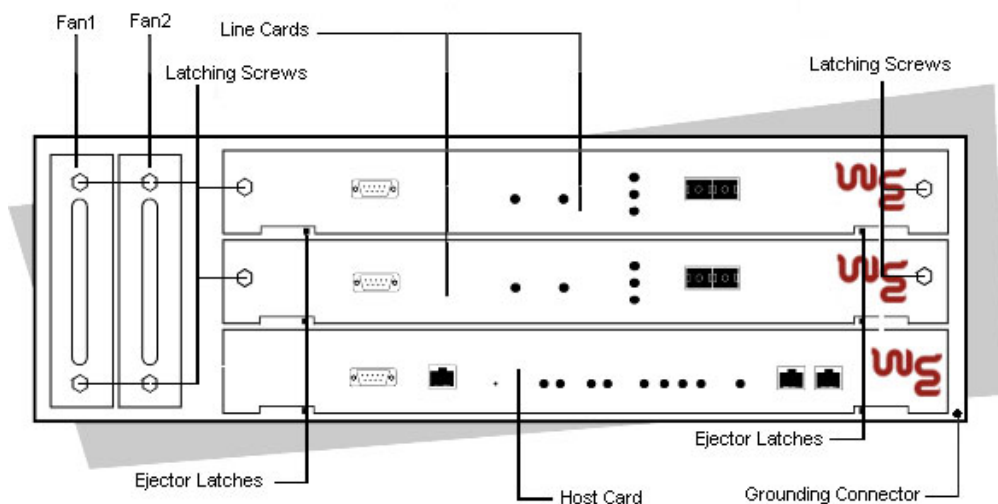
CAUTION

Electro-Static Discharge, ESD, can damage the board or system. Attach an ESD strap to your wrist and to the grounding connector on the back of the unit before opening the appliance or removing any card or module. Wear the ESD strap at all times while handling both old and new cards and modules.

Note: The appliance must be plugged into a properly grounded outlet for the grounding connector to function.

Removing line cards

The Firebox V200 has two line cards, which are installed from the front side of the appliance. These cards are not redundant or hot-swappable. You must complete a system shutdown in CLI or Vcontroller and turn off the appliance before you replace the line cards. For more information on completing a system shutdown, see the *Firebox Vclass User Guide*. Do not remove the defective line cards until a replacement is available. The following figure shows an assembled Firebox V200 appliance.



To remove a line card:

- 1 Shut down the system and turn off the power supply switch located on the back of the appliance. For more information on system shutdown, see the *Firebox Vclass User Guide*.

CAUTION

You must properly shutdown the system and turn off the power switch on the rear of the unit before removing a line card. Failure to do so could cause file corruption or damage to the board or system.

- 2 Attach an ESD strap to your wrist and to the grounding connector at the back of the unit before opening the appliance or removing any card or module. Electro-Static Discharge, ESD, can damage the board or system. Wear the ESD strap at all times while handling both old and new cards and modules.
Note: The appliance must be plugged in to a properly grounded outlet for the grounding connector to function.
- 3 Turn the card's latching screws counter-clockwise until they pop out.
- 4 Pull both ejector latches out toward the sides of the line card. The card disengages from the backplane and pops out of the slot slightly.
- 5 Remove the card from the unit. Be sure you handle it only by its faceplate and the bottom metal plate.

WARNING

The heat sink and other electrical components on the top of the card may be hot enough to cause burns. Handle the card only by its face plate and the bottom metal plate. Do not touch the heat sink or other electrical components on the top of the card. Do not place paper or other flammable materials on the top of the card.

WARNING

To prevent personal injury or damage to the board or system, do not insert your fingers, tools, or anything else into the appliance when a card is removed. The fan blades inside the appliance may continue to spin when a line card is removed. Do not leave the appliance unattended when a card or module is removed.

Replacing the line cards

Use the following procedure to replace a line card:

- 1 Attach an ESD strap to your wrist and to the grounding connector at the back of the unit before opening the appliance or removing any card or module. Electro-Static Discharge, ESD, can damage the board or system. Wear the ESD strap at all times while handling both old and new cards and modules.
Note: The appliance must be plugged in to a properly grounded outlet for the grounding connector to function.
- 2 Set the metal tray of the new line card on the bottom edge of the slot and slide the card along the two rails until the front of the card is flush with the chassis front. Be careful not to bump the heat sink of the line card on the top of the chassis opening.
- 3 Turn the latching screws clockwise until the card is fastened securely to the appliance chassis.
- 4 During initialization, the Firebox V200 detects what software version is on the host card and two line cards. If there is any difference between the software versions, the following error message appears.
A discrepancy in software version on the host card and line cards has been detected. Please perform a software update.
- 5 Follow the instructions that appear to perform a software update. The software update loads the same software version on both the host and line cards.

Replacing a fan card

The Firebox V200 operates with two fan cards. To view the status of each fan card, check the Fan Card Status LEDs on the front of the unit. If one of the five fans on a fan card is not operating, the status light for that card turns from green to red. However, you must not remove a fan card with an inoperative fan until a replacement is available. The fans that are still operating on the fan card will help cool the appliance.

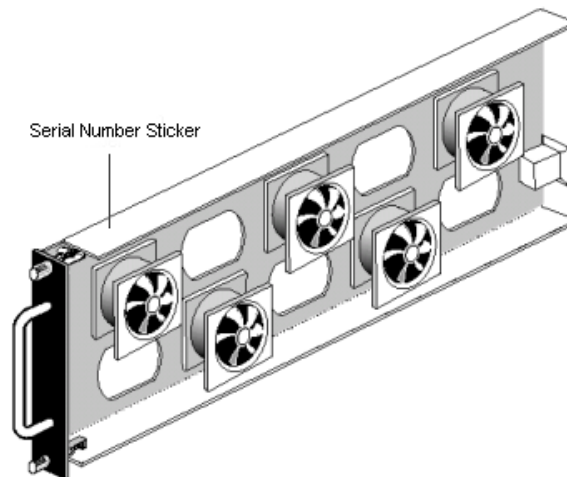
CAUTION

The fan status light changes to red when any one or more of the five fans on the fan card are not operating. To maintain optimal cooling, the fan card should be replaced promptly when the light is red. However, do not remove the fan card until a replacement fan card is available. Removing a fan card without having a replacement available will reduce cooling capacity and may damage the boards or system.

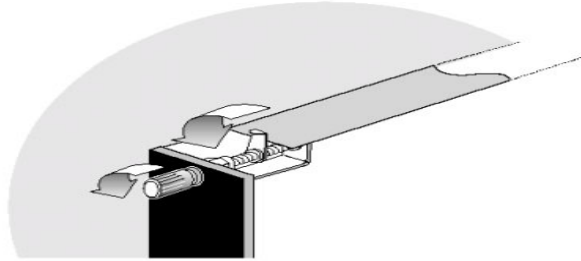
When the replacement fan card is available, the fan card with the inoperative fan can be replaced while the appliance is in operation.

Fan cards are not interchangeable because the fans on the first card are not in the same positions as those on the second card. Fan cards are labeled Fan1 and Fan2. Fan1 is in the left slot and Fan2 is in the right slot, as shown in the front of the appliance illustration on page 10.

A fan card appears as follows:



All fan cards have two latching screws that fasten the card to the chassis. The following figure shows the screws when they are unlatched.



To replace a fan card:

- 1 Unscrew the two latching screws that hold the fan card in place.
- 2 Attach an ESD strap to your wrist and to the grounding connector at the back of the unit before opening the appliance or removing any card or module. Electro-Static Discharge, ESD, can damage the board or system. Wear the ESD strap at all times while handling both old and new cards and modules.
Note: The appliance must be plugged in to a properly grounded outlet for the grounding connector to function.
- 3 Grasp the metal handle of the fan card and pull the card part of the way out of the chassis (about one inch out from the installed position). Wait five to ten seconds for the fans to stop spinning before removing the fan tray the rest of the way from the chassis. Some fans may still be moving.

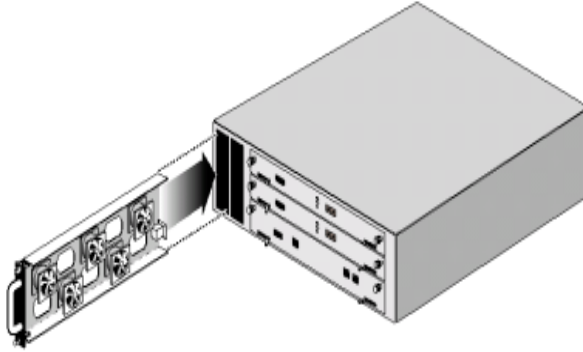
WARNING

Fans will continue to rotate as you pull out the card. Keep fingers, hair, and all objects clear of the rotating fans until fans stop.

WARNING

To prevent personal injury or damage to the board or system, do not insert your fingers, tools, or anything else into the appliance when a fan card is removed. When one fan card is removed, the blades on the other fan card continue to spin to provide cooling as long as the appliance is powered. Do not leave the appliance unattended when a fan card is removed.

- 4 Unpack the replacement card (Fan1 or Fan2) and make sure the openings in the replacement card match the ones in the inoperative card. The fans on each card must be in the same position.



- 5 Line up the fan card with the Serial Number sticker at the top inside rail and gently slide the fan card in until the front of the module is flush with the chassis front.
- 6 Turn the two latching screws until the card is fastened securely to the appliance chassis.
- 7 Check that the Fan Card Status LED on the front of the host card is green.

Replacing a power supply module

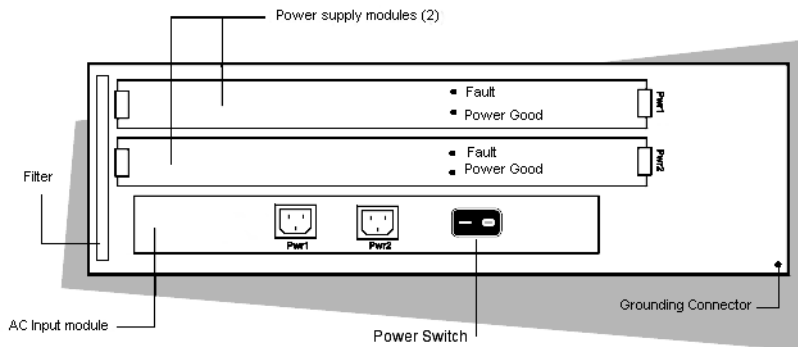
Because the Firebox V200 supports two fully redundant power supplies, either module can be removed while the appliance is in operation. To determine the status of each power supply, check the Fault LED and Power Good LED on each power supply, or check the Power Supply Status LEDs on the front of the unit. If a power supply needs to be replaced, you must not remove the inoperative power supply until a replacement is available.

CAUTION

Do not run the appliance with only one power supply inserted. Leaving one power supply slot open removes EMI shielding and changes the airflow from the cooling fans, which could damage the board or system.

You insert the power supply modules into two horizontal slots in the center back of the unit, and secure them with two latches each. Two power cords are located below the power supplies to connect the power supplies to a 100 to 240VAC (50/60Hz) power source. Power supplies are interchangeable, and can be inserted into either slot.

The power supply modules appear as shown on the back of the appliance.



To replace a power supply module:

- 1 Do not shut off power to the appliance to replace a power supply. A power supply module can be removed while the appliance is in operation.

If you want to shut off the power to the appliance to replace the power supply, make sure you complete a system shutdown in CLI or Vcontroller before shutting off the power. For information on how to complete a system shutdown, see the *Firebox Vclass User Guide*.

CAUTION

You must properly shutdown the system software before you turn off the power switch on the rear of the unit. Failure to do so, could cause file corruption or damage to the board or system.

- 2 Attach an ESD strap to your wrist and to the grounding connector at the back of the unit before opening the appliance or removing any card or module. Electro-Static Discharge, ESD, can damage the board or system. Wear the ESD strap at all times while handling both old and new cards and modules.
Note: The appliance must be plugged in to a properly grounded outlet for the grounding connector to function.
- 3 Press in the two latches and remove the power supply module.

WARNING

To prevent personal injury or damage to the board or system, do not inset your fingers, tools, or anything else into the appliance when a power supply module is removed. The fan blades inside the appliance continue to spin when a power supply module is removed. Do not leave the appliance unattended when a power supply module is removed.

- 4 Line up the new module with the interior rail guides and gently slide it in until the front of the module is flush with the chassis back.
- 5 Lock in the new module using the latches.

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- Admin light 4
- Alarm light 4
- appliances
 - and power failures 6
 - opening or assembling 6, 9

C

- cards
 - removing 9
- certification, FCC ii
- Console port 3

E

- Ethernet ports 2

F

- fan cards
 - removing 9
 - replacing 12
- FCC certification ii
- Firebox V200
 - assembling 9
 - opening 6
 - opening appliance 9
 - package contents 1

H

- host card
 - front of 3

L

- line cards
 - front of 2
 - removing 9
 - replacing 12

P

- ports
 - AC power 5
 - Console 3
 - Ethernet 2
- power failures 6
- Power switch 6

R

- Ready light 2